

CHICAGO
Electric Power Tools
INDUSTRIAL

1.5 QUART HEAVY DUTY STAINLESS STEEL ULTRASONIC CLEANER

Model 91957

ASSEMBLY & OPERATING INSTRUCTIONS



3491 Mission Oaks Blvd., Camarillo, CA 93011
Visit our Web Site at www.harborfreight.com

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For technical questions and replacement parts please call 1-800-444-3353.

THANK YOU for choosing a **HARBOR FREIGHT TOOLS** product. For future reference, please complete the owner's record below:

Model _____ Serial No. _____ Purchase Date _____

SAVE THE RECEIPT, WARRANTY AND THESE INSTRUCTIONS. It is important that you read the entire manual to become familiar with the unit BEFORE you begin assembly.

Technical Specifications

Material:	Industrial Grade Stainless Steel
Overall Dimensions:	9.3" H x 10.3" L x 6.3" Deep
Tank Size:	4" Deep x 9" L x 5.25" W
Type Fuse:	3 Amp up to 250 V fuse (F3A 250V)

The Heavy Duty 1.5 Quart Stainless Steel Ultrasonic Cleaner can be used for cleaning jewelry, metal products such as nozzles and valves, and tools. Not to be used for medical purposes or medical sanitizing.



READ ALL INSTRUCTIONS BEFORE USING THIS PRODUCT!

Safety Warnings and Precautions

WARNING: When using product, basic safety precautions should always be followed to reduce the risk of personal injury and damage to equipment.

Read all instructions before using this product!

WORK AREA

1. **Keep your work area clean and well lit.** Cluttered benches and dark areas invite accidents.
2. **Do not operate the Ultrasonic Cleaner in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.** Electrical products create sparks which may ignite the dust or fumes.
3. **Keep bystanders, children, and visitors away while operating the Ultrasonic Cleaner.** Distractions can cause you to lose control.

ELECTRICAL SAFETY

4. **This product has a 3-prong electrical plug, and must be plugged into an outlet properly installed and grounded in accordance with all codes and ordinances. Never remove the grounding prong or modify the plug in any way. Do not use any adapter plugs. Check with a qualified electrician if you are in doubt as to whether the outlet is properly grounded.** If a grounded product should electrically malfunction or break down, grounding provides a low resistance path to carry electricity away from the user.
5. **Double insulated products are equipped with a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install a polarized outlet. Do not change the plug in any way.** Double insulation eliminates the need for the three wire grounded power cord and grounded power supply system.

6. **Avoid body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerators.** There is an increased risk of electric shock if your body is grounded.
7. **Do not abuse the Power Cord. Never use the Power Cord to carry the Ultrasonic Cleaner or pull the Plug from an outlet. Keep the Power Cord away from heat, oil, sharp edges, or moving parts. Replace damaged Power Cords immediately.** Damaged Power Cords increase the risk of electric shock.
8. **When operating a power tool outside, use an outdoor extension cord marked “W-A” or “W”.** These extension cords are rated for outdoor use, and reduce the risk of electric shock.

PERSONAL SAFETY

9. **Stay alert. Watch what you are doing, and use common sense when operating the Ultrasonic Cleaner. Do not operate this product while tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating the Ultrasonic Cleaner may result in serious personal injury.
10. **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from moving parts.** Loose clothes, jewelry, or long hair can be caught in moving parts.
11. **Avoid accidental starting. Be sure the Power Switch is off before plugging in.** Carrying appliances with your finger on the Power Switch, or plugging in appliances with the Power Switch on, invites accidents.
12. **Remove adjusting keys or wrenches before turning the Ultrasonic Cleaner on.** A wrench or a key that is left attached to a rotating part of the Ultrasonic Cleaner may result in personal injury.
13. **Do not overreach. Keep proper footing and balance at all times.** Proper footing and balance enables better control of the power tool in unexpected situations.
14. **Use safety equipment. Always wear eye protection.** Dust mask, non-skid safety shoes, hard hat, or hearing protection must be used for appropriate conditions. Wear full face shield to protect against chemical splashing.

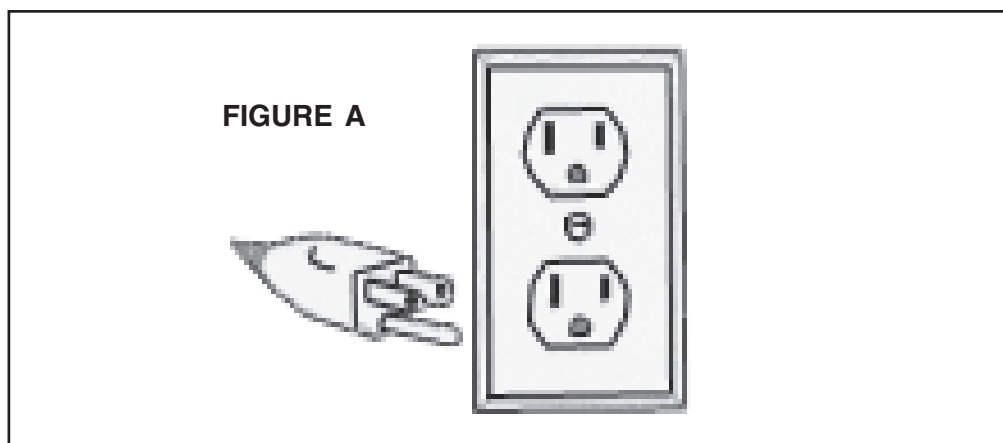
TOOL USE AND CARE

15. **Do not overload the Ultrasonic Cleaner. Use the correct Ultrasonic Cleaner for your application.** The Ultrasonic Cleaner will do the job better and safer at the speed and capacity for which it is designed.
16. **Do not use the Ultrasonic Cleaner if the Power Switch does not turn it on or off.** Any appliance that cannot be controlled with the Power Switch is dangerous and must be replaced.

17. **Disconnect the Power Cord Plug from the power source before making any adjustments, changing accessories, or storing the Ultrasonic Cleaner.** Such preventive safety measures reduce the risk of turning on the product accidentally.
18. **Store idle tools out of reach of children and other untrained persons.** Tools are dangerous in the hands of untrained and unsurprised users.
19. **Maintain the Ultrasonic Cleaner with care.** Do not use a damaged Ultrasonic Cleaner. Tag damaged Ultrasonic Cleaner “Do not use” until repaired.
20. **Check for misalignment or binding of moving parts, breakage of parts, and any other condition that may affect the Cleaner’s operation. If damaged, have the Cleaner serviced before using.** Many accidents are caused by poorly maintained appliances.

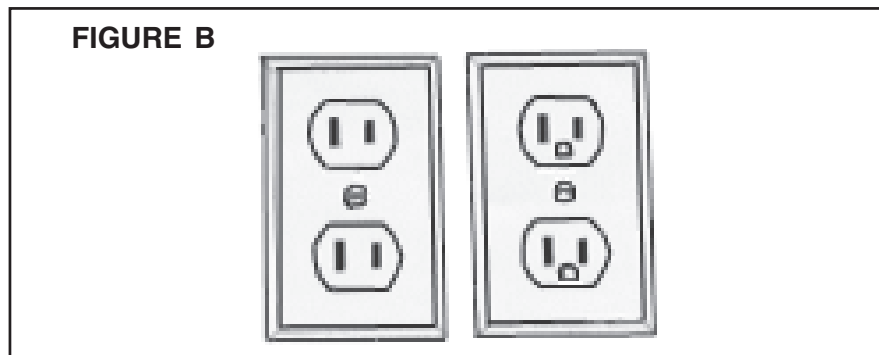
SERVICE

21. **Ultrasonic Cleaner service must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified personnel could result in a risk of injury.
22. **When servicing the Ultrasonic Cleaner, use only identical replacement parts. Follow instructions in the “*Inspection, Maintenance, And Cleaning*” section of this manual.** Use of unauthorized parts or failure to follow maintenance instructions may create a risk of electric shock or injury.
23. **Always unplug the Ultrasonic Cleaner from its electrical outlet before performing any inspection, maintenance, or cleaning procedures.**
24. **WARNING! People with pacemakers should consult their physician(s) before using this product. Operation of electrical equipment in close proximity to a heart pacemaker could cause interference or failure of the pacemaker.**



DOUBLE INSULATED APPLIANCES: APPLIANCES WITH TWO PRONG PLUGS

1. Appliances marked “Double Insulated” do not require grounding. They have a special double insulation system which satisfies OSHA requirements and complies with the applicable standards of Underwriters Laboratories, Inc., the Canadian Standard Association, and the National Electrical Code. **(See Figure B.)**
2. Double insulated tools may be used in either of the 120 volt outlets shown in the following illustration. **(See Figure B.)**



EXTENSION CORDS

1. **Grounded** appliances require a three wire extension cord. **Double Insulated** products can use either a two or three wire extension cord.
2. As the distance from the supply outlet increases, you must use a heavier gauge extension cord. Using extension cords with inadequately sized wire causes a serious drop in voltage, resulting in loss of power and possible tool damage. **(See Figure C, next page.)**
3. The smaller the gauge number of the wire, the greater the capacity of the cord. For example, a 14 gauge cord can carry a higher current than a 16 gauge cord. **(See Figure C.)**
4. When using more than one extension cord to make up the total length, make sure each cord contains at least the minimum wire size required. **(See Figure C.)**
5. If you are using one extension cord for more than one tool, add the nameplate amperes and use the sum to determine the required minimum cord size. **(See Figure C.)**
6. If you are using an extension cord outdoors, make sure it is marked with the suffix “W-A” (“W” in Canada) to indicate it is acceptable for outdoor use.
7. Make sure your extension cord is properly wired and in good electrical condition. Always replace a damaged extension cord or have it repaired by a qualified electrician before using it.
8. Protect your extension cords from sharp objects, excessive heat, and damp or wet areas.

FIGURE C

RECOMMENDED MINIMUM WIRE GAUGE FOR EXTENSION CORDS* (120 VOLT)					
NAMEPLATE AMPERES (At Full Load)	EXTENSION CORD LENGTH				
	25 Feet	50 Feet	75 Feet	100 Feet	150 Feet
0 – 2.0	18	18	18	18	16
2.1 – 3.4	18	18	18	16	14
3.5 – 5.0	18	18	16	14	12
5.1 – 7.0	18	16	14	12	12
7.1 – 12.0	16	14	12	10	-
12.1 – 16.0	14	12	10	-	-
16.1 – 20.0	12	10	-	-	-

* Based on limiting the line voltage drop to five volts at 150% of the rated amperes.

SPECIFIC PRODUCT WARNINGS AND PRECAUTIONS

1. **Never use volatile solvents to clean objects in the Ultrasonic Cleaner. Never use gasoline or other flammable liquids.**
2. **Maintain labels and nameplates on the Ultrasonic Cleaner.** These carry important information. If unreadable or missing, contact Harbor Freight Tools for a replacement.
3. **Always wear ANSI approved safety goggles when using the Ultrasonic Cleaner.** Using personal safety devices reduce the risk for injury. Wear full face shield to protect against chemical splashing.
4. **Maintain a safe working environment.** Keep the work area well lit. Make sure there is adequate surrounding workspace. Always keep the work area free of obstructions, grease, oil, trash, and other debris. Do not use the Ultrasonic Cleaner in areas near flammable chemicals, dusts, and vapors. Do not use this product in a damp or wet location.
5. **Avoid unintentional starting.** Make sure you are prepared to begin work before turning on the Ultrasonic Cleaner.
6. **Never leave the Ultrasonic Cleaner unattended when it is plugged into an electrical outlet.** Turn off the Ultrasonic Cleaner, and unplug it from its electrical outlet before leaving the work area.
7. **Never immerse the Ultrasonic Cleaner in liquid.**
8. **Do not place or store the Stainless Steel Ultrasonic Cleaner where it can fall or be pulled into a tub, sink or other free-standing pool of water.**
9. **Do not submerge non-waterproof products into the water.**
10. **Do not use for medical purposes or medical sanitizing.**

11. **Do not use penetrating oils in the Cleaner as they may damage the Cleaner and any materials being cleaned.**
12. **Do not overfill the Cleaner. Use water only to the fill line when filling the tank.**
13. **Do not clean multiple objects at a time. Using many objects in the tank at one time will cause them to bang against one another, damaging both the articles being cleaned and the tank.**
14. **Use only lukewarm water. Excessively hot water will damage the transducer.**
15. **Never use a cleaning agent that would bubble or suds up over the edge of the cleaning tank.**

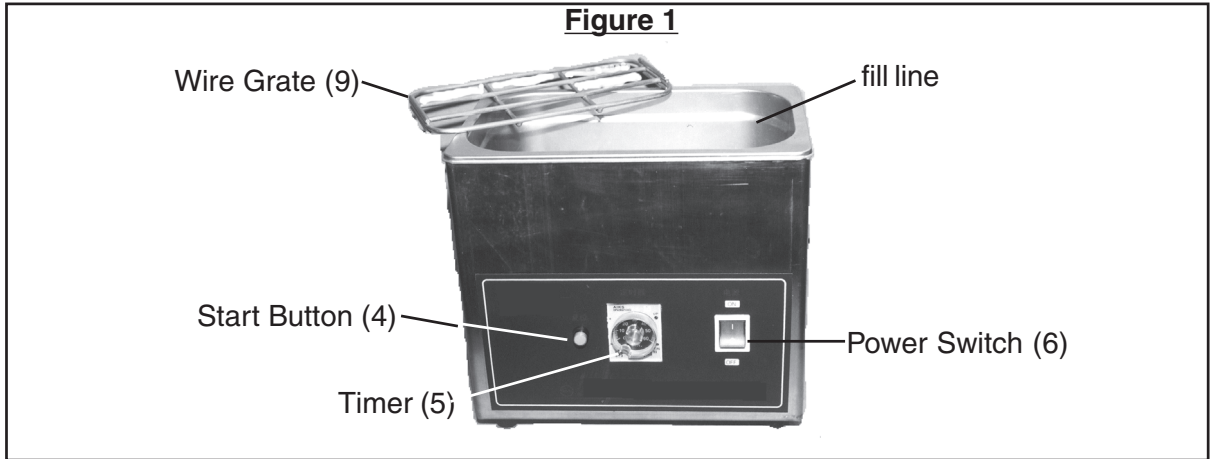
WARNING: The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

Assembly/ Operation

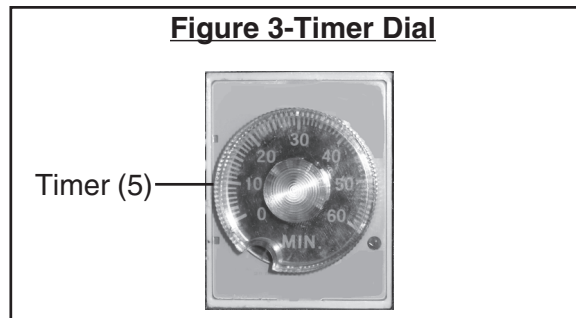
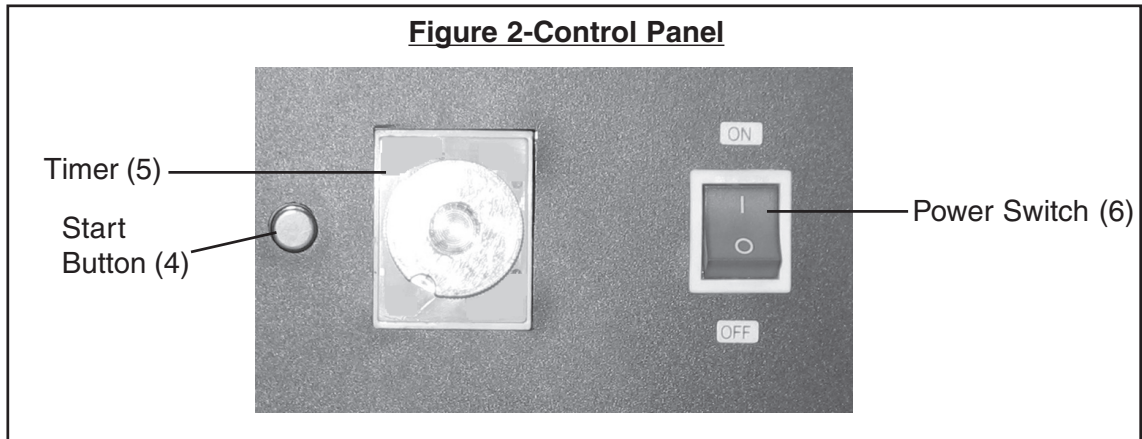
Your Heavy Duty Ultrasonic Cleaner comes completely assembled. It is important that you read the entire manual to become familiar with the product BEFORE you use the Ultrasonic Cleaner. Before using the Ultrasonic Cleaner be sure that you have all parts described in the Parts List and Assembly Diagram located on the last pages of this manual.

USE WATER OR A WATER/SOAP SOLUTION TO CLEAN OBJECTS IN THE ULTRASONIC CLEANER. FAILURE TO FILL THE ULTRASONIC CLEANER WITH WATER OR A WATER/SOAP SOLUTION BEFORE USING WILL SEVERELY DAMAGE IT AND VOID THE WARRANTY.

1. Make certain that the Cleaner ON/OFF Switch is in the "OFF" position. Make certain that the Cleaner is unplugged.
2. Fill the tank to the fill line with water or water/soap solution - see Figure 1. Use water that is lukewarm. Excessively hot fluid will damage the Transducer (7).
3. Set the grill in the bottom of the Tank, then place the item(s) to be cleaned on the grill. (Do not place items directly on the Tank bottom, this may damage the transducers.)



4. First plug in the Ultrasonic Cleaner. Turn “ON” the power by pushing the Power Switch (6) to the ON (marked “I”) position. To turn the power “OFF” at any time, press the Power Switch (6) to the “OFF” position (marked “O”)-see Figure 2.
5. The Ultrasonic Cleaner is equipped with a Timer (5) which can be set from 0 to 60 minutes-see Figure 3. Depending on the extent of the dirt on the article, and the intricacy of the article being cleaned, set the Timer (5) up to 60 minutes.
6. On some occasions, the initial cleaning may not adequately clean the article. A second period of cleaning usually finishes the cleaning process. Pressing the green Start Button (4) will restart the cycle according to the setting previously indicated on the Timer (5)-see Figure 2.

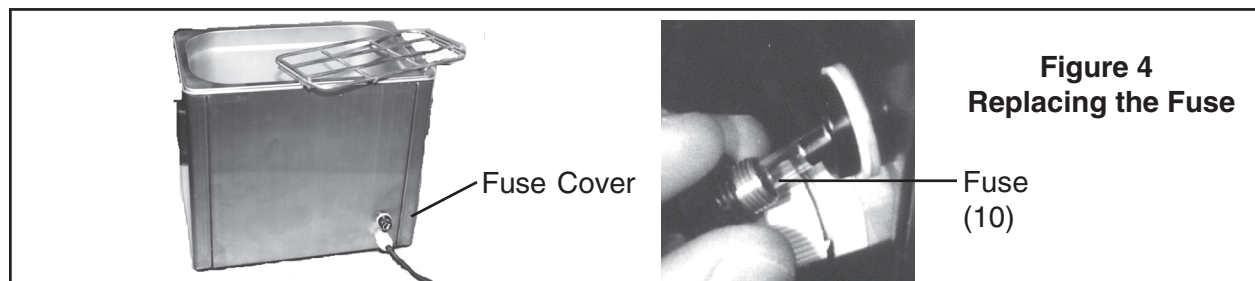


Replacing the Fuse

The Ultrasonic Cleaner has a Fuse (10). If everything appears to be in good condition, and yet the Ultrasonic Cleaner is not working or functioning properly, check the Fuse (10). The Ultrasonic Cleaner uses a 3 Amp up to 250 V fuse (F3A 250V). It is located on the rear of the Ultrasonic Cleaner, under the Fuse cover, above the Power Cord-see Figure 4 next page.

NOTE: Overheating the Ultrasonic Cleaner will blow the Fuse.

1. Make certain all power is "OFF" and that the Ultrasonic Cleaner is unplugged. Remove the Fuse Cover (11). If the Fuse Cover (11) does not easily come off, use Needle Nosed Pliers to grasp the Fuse Cover (11). Turn counterclockwise to loosen and remove.
2. Grasp the Fuse (10) and pull it from its housing and insert a replacement Fuse (10). Replace the Fuse Cover by installing and turning clockwise until securely in place. Do not overtighten.



Inspection, Maintenance and Cleaning

1. **Disconnect the Power Cord Plug from the power source before making any adjustments, changing accessories, or storing the tool.** Such preventive safety measures reduce the risk of electric shock.
2. Before each use inspect the general condition of the Ultrasonic Cleaner. Check for loose screws, misalignment or binding of moving parts, cracked or broken parts, damaged power plug/Cord and any other condition that may affect the safe operation of the Ultrasonic Cleaner. If abnormal noise or vibration occurs, immediately disconnect the Ultrasonic Cleaner from its electrical supply source and have the problem corrected before further use. **DO NOT USE DAMAGED EQUIPMENT.**
3. Servicing of internal components should only be done by a qualified service technician.
4. Clean the Ultrasonic Cleaners' water tank with a damp cloth. Remove any oil and residue after each use. Do not clean with flammable or corrosive liquids.

Unpacking

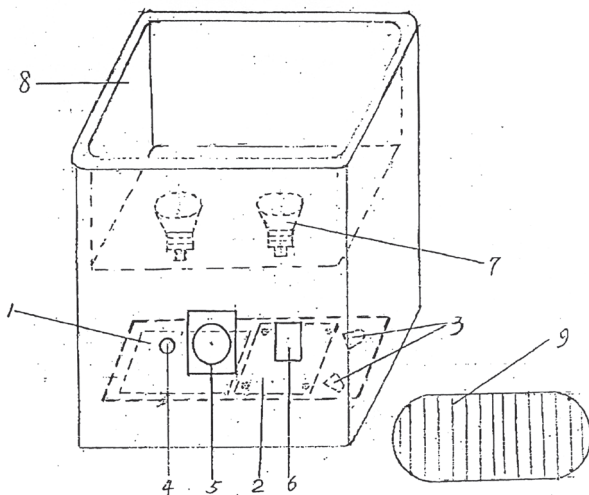
When unpacking the 1.5 Quart Heavy Duty Ultrasonic Cleaner, check to make sure the following parts are included. If any parts are missing or broken, please call **HARBOR FREIGHT TOOLS** at **1-800-444-3353**.

Parts List

Part #	Description	Quantity	Part #	Description	Quantity
1	Voltage Transformer	Nut 8 m	7	Transducer	2
2	Board	1	8	Cylinder Block	1
3	Power Transistor	1	9	Wire Grid	1
4	Start Button	1	10	Fuse-F3A 250V	1
5	Timer	1	11	Fuse Cover	1
6	Power Switch	1			

Note: Some parts are listed and shown for illustration purposes only and are not available individually as replacement parts.

Parts and Assembly Diagram



PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER NOR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

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LIMITED 1 YEAR WARRANTY

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of one year from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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